

IN THE CLAIMS

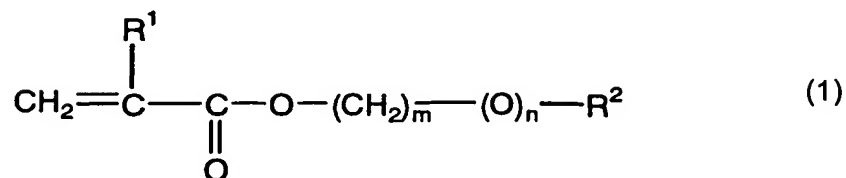
Claim 1 (original) A microencapsulated pigment comprising pigment particles having an anionic group on the surface thereof and being coated with a polymer, the polymer comprising a repeating structural unit derived from a cationically polymerizable surface active agent having a cationic group, a hydrophobic group and a polymerizable group and a repeating structural unit derived from an anionically polymerizable surface active agent having an anionic group, a hydrophobic group and a polymerizable group and/or a hydrophilic monomer having an anionic group.

Claim 2. (original) A microencapsulated pigment comprising pigment particles having an anionic group on the surface thereof and being coated with a polymer by polymerizing a cationically polymerizable surface active agent having a cationic group, a hydrophobic group and a polymerizable group with an anionically polymerizable surface active agent having an anionic group, a hydrophobic group and a polymerizable group and/or a hydrophilic monomer having an anionic group in an aqueous dispersion in which the pigment particles are dispersed.

Claim 3 (previously presented) The microencapsulated pigment according to claim 1, wherein the polymer further comprises a repeating structural unit derived from a hydrophobic monomer.

Claim 4 (previously presented) The microencapsulated pigment according to any one of claims 1 to 3, wherein the polymer further comprises a repeating structural unit derived from a crosslinkable monomer and/or a repeating structural unit

derived from a monomer represented by the following general formula (1):



wherein R¹ represents a hydrogen atom or a methyl group, R² represents a t-butyl group, an alicyclic hydrocarbon group, an aromatic hydrocarbon group, or a heterocyclic group, m represents an integer of 0 to 3, and n represents an integer of 0 or 1.

Claim 5 (previously amended) The microencapsulated pigment according to claim 1, wherein the pigment constituting the pigment particles is carbon black or an organic pigment.

Claim 6 (currently amended) The microencapsulated pigment according to claim 1, wherein the anionic group of the pigment particles is a sulfonic acid anion group (-SO₃⁻) and/or a sulfinic acid anion group (-RSO₂⁻; -RSO₂⁻; wherein R represents a C₁-C₁₂ alkyl group or a phenyl group and or a modified group of the alkyl or phenyl group thereof).

Claim 7 (previously presented) The microencapsulated pigment according to claim 1, wherein the anionic group of the pigment particles is a carboxylic acid anion group (-COO⁻).

Claim 8 (previously presented) The microencapsulated pigment according to claim 1, wherein the cationic group of the cationically polymerizable surface active agent is selected from the group consisting of a primary amine cation, a secondary amine cation, a tertiary amine cation, and a quaternary ammonium cation.

Claim 9 (previously presented) The microencapsulated pigment according to claim 1, wherein the hydrophobic group of the cationically polymerizable surface active agent is selected from the group consisting of an alkyl group, an aryl group, and a combined group thereof.

Claim 10 (previously presented) The microencapsulated pigment according to claim 1, wherein the polymerizable group of the cationically polymerizable surface active agent is a radically polymerizable unsaturated hydrocarbon group and is selected from the group consisting of a vinyl group, an allyl group, an acryloyl group, a methacryloyl group, a propenyl group, a vinylidene group, and a vinylene group.

Claim 11 (previously presented) A process for producing a microencapsulated pigment by coating pigment particles having an anionic group on the surface thereof with a polymer, which comprises:

adding a cationically polymerizable surface active agent to an aqueous dispersion of the pigment particles having an anionic group on the surface thereof, followed by mixing;

adding thereto an anionically polymerizable surface active agent and/or a hydrophilic monomer having an anionic group to emulsify the mixture; and then

adding thereto a polymerization initiator to carry out emulsion polymerization.

Claim 12 (previously presented) A process for producing a microencapsulated pigment by coating pigment particles having an anionic group on the surface thereof with a polymer, which comprises:

adding a cationically polymerizable surface active agent to an aqueous dispersion of the pigment particles having an anionic group on the surface thereof, followed by mixing;

adding thereto a hydrophobic monomer, followed by mixing;

further adding thereto an anionically polymerizable surface active agent and/or a hydrophilic monomer having an anionic group to emulsify the mixture; and then

adding thereto a polymerization initiator to carry out emulsion polymerization.

Claim 13 (original) The process for producing a microencapsulated pigment according to claim 12, comprising:

a step of adding a cationically polymerizable surface active agent having a cationic group, a hydrophobic group and a polymerizable group to an aqueous dispersion of the pigment particles having an anionic group on the surface thereof, followed by mixing and treatment by irradiation with an ultrasonic wave;

a step of adding a hydrophobic monomer, followed by mixing;

a step of adding an anionically polymerizable surface active agent having an anionic group, a hydrophobic group and a polymerizable group and/or the hydrophilic monomer having an anionic group, followed by mixing and treatment

by irradiation with an ultrasonic wave; and

a step of adding a polymerization initiator to carry out emulsion polymerization,

wherein the process is carried out in the above order of the steps.

Claim 14 (original) The process for producing a microencapsulated pigment according to claim 12, comprising:

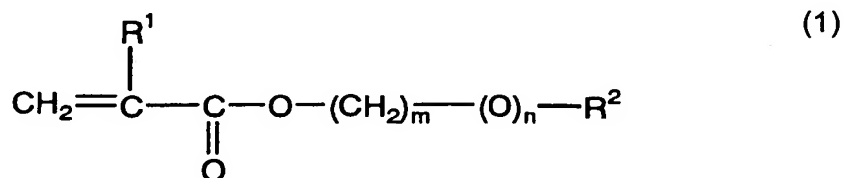
a step of adding a cationically polymerizable surface active agent having a cationic group, a hydrophobic group and a polymerizable group to an aqueous dispersion of the pigment particles having an anionic group on the surface thereof, followed by mixing and treatment by irradiation with an ultrasonic wave;

a step of adding a hydrophobic monomer and a crosslinkable monomer and/or a monomer represented by general formula (1) shown below, followed by mixing;

a step of adding an anionically polymerizable surface active agent having an anionic group, a hydrophobic group and a polymerizable group and/or the hydrophilic monomer having an anionic group, followed by mixing and treatment by irradiation with an ultrasonic wave; and

a step of adding a polymerization initiator to carry out emulsion polymerization,

wherein the process is carried out in the above order of the steps:



wherein R¹ represents a hydrogen atom or a methyl group, R² represents a t-butyl group, an alicyclic hydrocarbon group, an aromatic hydrocarbon group, or a heterocyclic group, m represents an integer of 0 to 3, and n represents an integer of 0 or 1.

Claim 15 (currently amended) The process for producing a microencapsulated pigment according to claim 11, wherein the pigment constituting the pigment particles is carbon ~~lack~~ black or an organic pigment.

Claim 16 (previously presented) An aqueous dispersion containing a microencapsulated pigment according to claim 1.

Claim 17 (original) An ink jet recording ink comprising an aqueous dispersion according to claim 16.

Claim 18 (original) The ink jet recording ink according to claim 17, which is produced by purification treatment of the aqueous dispersion, wherein the concentration of unreacted anionically polymerizable surface active agent and/or hydrophilic monomer having an anionic group after the purification treatment is 50,000 ppm or less based on the aqueous component in the aqueous dispersion.

Claim 19 (original) The ink jet recording ink according to claim 17, which is produced by purification treatment of the aqueous dispersion, wherein the total concentration of unreacted anionically polymerizable surface active agent and/or hydrophilic monomer having an anionic group, and unreacted hydrophobic monomer after the purification treatment is 50,000 ppm or less based on the

aqueous component in the aqueous dispersion.

Claim 20 (original) The ink jet recording ink according to claim 17, which is produced by purification treatment of the aqueous dispersion, wherein the total concentration of unreacted cationically polymerizable surface active agent, unreacted anionically polymerizable surface active agent and/or hydrophilic monomer having an anionic group, and unreacted hydrophobic monomer after the purification treatment is 50,000 ppm or less based on the aqueous component in the aqueous dispersion.

Claim 21 (previously presented) The ink jet recording ink according to claim 20, wherein the total amount of unreacted cationically polymerizable surface active agent, unreacted anionically polymerizable surface active agent and/or hydrophilic monomer having an anionic group, and unreacted hydrophobic monomer before the purification treatment is 5 to 40% by weight based on the charged amount thereof.

Claim 22 (previously presented) An ink jet recording ink comprising at least a microencapsulated pigment according to claim 1 and water.

Claim 23 (previously presented) The ink jet recording ink according to claim 17, further comprising polymer fine particles, wherein the polymer fine particles has an anionic group on the surface thereof, a glass transition temperature of 30°C or lower, and a volume average particle size of 10 to 200 nm.

Claim 24 (original) The ink jet recording ink according to claim 23, wherein the

anionic group on the surface of the polymer fine particles is the same as the anionic group on the surface of the microencapsulated pigment.

Claim 25 (previously presented) The ink jet recording ink according to claim 23, wherein the polymer fine particles has such a reactivity with a bivalent metal salt that time required for decreasing the transmittance of a light having a wavelength of 700 nm to 50% of an initial value is 1×10^4 second or less when 3 parts by volume of a 0.1% by weight aqueous emulsion of the polymer fine particles is brought into contact with 1 part by volume of a 1 mol/l aqueous solution of the bivalent metal salt.

Claim 26 (previously presented) The ink jet recording ink according claim 17, further comprising a water-soluble organic solvent.

Claim 27 (original) The ink jet recording ink according to claim 26, wherein the water-soluble organic solvent is a high-boiling water-soluble organic solvent having a boiling point of 180°C or higher.

Claim 28 (previously presented) The ink jet recording ink according to claim 26, wherein the water-soluble organic solvent is glycerin.

Claim 29 (previously presented) The ink jet recording ink according to claim 26, wherein the water-soluble organic solvent is one or more compounds selected from the group consisting of an alkyl ether of a polyhydric alcohol and/or a 1,2-alkyldiol.

Claim 30 (previously presented) The ink jet recording ink according to claim 17, further comprising a solid wetting agent in an amount of 3 to 20% by weight based on the total weight of the ink jet recording ink.

Claim 31 (original) The ink jet recording ink according to claim 30, wherein the solid wetting agent is one or more compounds selected from the group consisting of trimethylolpropane, 1,2,6-hexanetriol, a saccharide, and a sugar alcohol.